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ABSTRACT

Increased student demand for foundations courses, coupled with a lack of qualified staff, made it necessary to provide workable alternatives to traditional instruction. Substantial adjustments could not be made until the efficacy of the new methods could be documented. The study compared cognitive and attitudinal outcomes of two types of classes, a traditional one of 38 students (the control group), which met three times weekly for periods of 50 minutes each, and an experimental group of 90 students, which met twice weekly for 50 minutes at 7:00 p.m., and once weekly for 50 minutes in groups of about 15. The nature of the cognitive comparison was an objective test based on a text common to both groups. The test was administered prior to and after instruction, and results were analyzed by the analysis of covariance technique. Attitudinal comparisons were made in general evaluation of the course, method of instruction, course content, interest, instruction, time schedule and development of concepts and ideas. Analysis of covariance results revealed that no significant difference existed between the two groups on cognitive goals. Tests for significant differences between proportions were conducted for comparisons on attitudinal components. A significant difference in favor of the experimental group was found in the method of instruction, whereas a significant difference in favor of the control group was found in the time convenience category. (Author)

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A COMPARISON OF COGNITIVE AND ATTITUDINAL OUTCOMES OF TWO METHODS OF TEACHING SOCIAL FOUNDATIONS OF EDUCATION CLASSES

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Accrediting agency guidelines for teacher education programs resulted in a mandatory Social Foundations of Education course for all prospective teachers at Virginia Polytechnic Institute and State University. For this reason, and because of a growing popularity of the course with non-majors, a rapid growth in enrollment ensued. Large enrollments, combined with a lack of qualified staff and budgetary considerations, made it necessary to provide workable alternatives to traditional instruction. In addition to these reasons, there was also a concern to find a better way of teaching Foundations courses, in the belief that these courses were worthwhile endeavors and deserved attention and research upon which innovations could be based. It was felt that substantial changes should not be made until the efficacy of the new methods of instruction could be documented.

Research on the efficacy of large versus small group instruction in cognitive outcomes as summarized in McKeachie (1969) is twofold. He says that, using traditional achievement tests as criteria, there appears to be no difference. However, he states that large groups are less effective than small groups in the area of retention of knowledge, critical thinking, and attitudinal change. McKeachie relates that, independent of the evidence, faculty and students believe that teaching is more effective in small classes. Further, he points out that student ratings of instructors is related to class size, with teachers of smaller classes rated higher than the instructors of large groups.

Cognitive outcomes of instruction and ratings of course efficacy are, for their separate reasons, major concerns in academic programs. In the current study we tried to determine if a type of instruction could be devised which was economically more efficient than traditional instruction, yet was not detrimental to cognitive goals or to attitudes of students toward the course. The instructional format devised for these purposes sought to combine the techniques of large and small group instruction in the hope that advantages of both would accrue. Students enrolled would receive some instruction en masse (i.e., lectures, tests, guest speakers) and other instruction in small groups (i.e., discussion and interaction). It was the hope of those in charge of the course that cost benefits would result from the large sections and that the students' attitudes to the course would be favorable because of attention received in discussion periods.

Thus, the students were divided into two groups. The first group, a traditional one of thirty-eight students (the control group), met three times weekly for periods of fifty minutes each at 10:00 a.m. The method of instruction used with them included: lectures by the instructor, three films, and individual and group reports by students on their research projects. The second group (the experimental) was composed of ninety students, met twice weekly for fifty minutes at 7:00 p.m., and once weekly for fifty minutes at various times during the day for discussion in groups of about fifteen. The method of instruction for the large group was the lecture method, with approximately one-half of the lectures given by the

instructor, the other half by guest speakers, both within and without the university community. Students were required to write position papers which dealt with the issues covered by the lectures. The method of testing was the same for both groups.

The nature of the cognitive comparison was a fifty item multiple choice objective test based on information from a text used for both groups. The test was administered at the beginning of the quarter prior to course instruction and at the conclusion of the quarter. Results of the test are shown in Table I, which shows the means and variances of the control and experimental groups. Casual inspection reveals that there is relatively little difference between the two groups in either of the testing situations.

TABLE I

FINDINGS ON COGNITIVE OUTCOMES
FOR CONTROL AND EXPERIMENTAL GROUPS

	Control (N = 38)		Experimental (N = 90)	
	$\bar{x}$	var	$\bar{x}$	var
Pre-Test	25.64	19.97	25.38	16.05
Post-Test	32.03	20.03	32.25	31.90

The test for significant differences between groups was done by means by the analysis of co-variance technique. Table II depicts the co-variance analysis and gives the F ratio. The results were not significant. No

difference was found to exist between the two groups on cognitive goals of instruction as measured by a test based on the common text.

TABLE II

SUMMARY TABLE FOR THE ANALYSIS OF CO-VARIANCE

Source	DF	SS_x	SP	SS_y	DF'	SS_y'	MS_y'
Between	1	1.03	- .95	.79	1	.31	.31
Within	60	1100.45	-335.70	1578.90	69	1476.49	25.025
TOTAL	61	1101.48	-336.65	1579.69	70	1476.80	XXXX

$$F = \frac{.31}{25.03} = .012 \qquad df = \frac{1}{59}$$ Not Significant

Attitudinal comparisons were made by means of a questionnaire. This instrument was adopted from Spencer's "Course Evaluation Questionnaire." The questionnaire was composed of items purporting to measure the following attitudes about the course:

1) general attitude toward the course - eight items;
2) method of instruction - eight items;
3) course content - eight items;
4) student interest and attention - eight items;
5) student attitude toward the instructor - eight items;
6) time schedule of the classes - one item;
7) development of concepts and ideas - one item.

Table III summarizes the findings relevant to the attitudinal inquiries.

TABLE III

PERCENTAGE OF FAVORABLE ATTITUDINAL RESPONSES
FOR CONTROL AND EXPERIMENTAL GROUPS

	Control	Experimental
1) General Attitude	96	94
2) Method of Instruction	81	91
3) Course Content	86	85
4) Student Interest and Attention	87	83
5) Attitude Toward Instructor	94	96
6) Time Schedule	100	55
7) Development of Concepts and Ideas	79	82

Tests of significance for differences between proportions between the control and experimental groups were conducted. Significant differences were found in two of the attitudinal categories, the method of instruction category, where 81% of the students of the control group favored the method of instruction used with that group, whereas 91% of the students of the experimental group favored the method of instruction used with them. The second significant difference occurred on the time schedule facet. One hundred percent of the students in the control group favored the time schedule within which they operated. Only 55% of the students in the experimental group favored their class schedule.

In this experiment an investigation into the effects of an innovative method of instruction on cognitive and attitudinal outcomes was undertaken.

Our findings suggest that large group instruction, when combined with small group interaction, may provide a satisfactory alternative to traditional instruction. The experimental method contains the potential of economic advantage, while not harming cognitive outcomes or adversely affecting student attitudes toward the course or instructor. The only detrimental evidence uncovered was the time schedule. Inquiries disclosed that the major reason for student dissatisfaction resided in the evening sessions which interfered with many of their other activities, which suggests that the time the class meets should be taken into consideration by persons in charge of scheduling, should they wish to implement a program of this nature.

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